

WHAT IS CLAIMED IS:

1. A method for manufacturing a glass powder having a desired average particle size which comprises spray-thermally decomposing a mixed solution comprising (a) a raw material oxide powder comprising a glass network-forming element, said raw material powder having an average particle size which is not more than about 1/5 of said average particle size of said glass powder, and (b) an aqueous solution of a water-soluble compound comprising a different glass-forming element, wherein

when the amount of said raw material oxide powder is less than about 45% by weight based on the total of the amount of said raw material oxide powder and the oxide-converted amount of said water-soluble compound, the spray-thermal decomposition temperature is not less than the melting point of said glass powder plus about 50°C when the raw material oxide powder has an average particle size which is more than about 1/25 of the average particle size of said glass powder and is not less than the melting point of said glass powder plus about 20°C when the raw material oxide powder has an average particle size which is more than about 1/25 of the average particle size of said glass powder; and

when the amount of said raw material oxide powder is more than about 45% by weight based on the total of the amount of said raw material oxide powder and the oxide-converted amount of said water-soluble compound, the spray-thermal decomposition temperature is not less than the melting point of said glass powder plus about 30°C when the raw material oxide powder has an average particle size which is more than about 1/25 of the average particle size of said glass powder and is not less than the melting point of said glass powder when the raw material oxide powder has an average particle size which is more than about 1/25 of the average particle size of said glass powder.

2. A method for manufacturing a glass powder according to Claim 1, wherein said mixed solution is heated by radiant heat.
3. A method for manufacturing a glass powder according to Claim 2, wherein said water-soluble compound is at least one member selected from the group consisting of chloride, nitrate, acetate, sulfate and formate.
4. A method for manufacturing a glass powder according to Claim 3, wherein the total of the concentration of said raw material oxide powder and the oxide-converted concentration of said water-soluble compound is about 0.05% to 20% by weight of said mixed solution.
5. A method for manufacturing a glass powder according to Claim 4, wherein said water-soluble compound is a nitrate or acetate of barium or calcium, and said raw material powder comprises Si or Al.
6. A method for manufacturing a glass powder according to Claim 5, wherein the amount of said raw material oxide powder is less than about 45% by weight based on the total of the amount of said raw material oxide powder and the oxide-converted amount of said water-soluble compound, and the raw material oxide powder has an average particle size which is more than about 1/25 of the average particle size of said glass powder.
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7. A method for manufacturing a glass powder according to Claim 5, wherein the amount of said raw material oxide powder is less than about 45% by weight based on the total of the amount of said raw material oxide powder and the oxide-converted amount of said water-soluble compound, and the raw material oxide

5 powder has an average particle size which is less than about 1/25 of the average
particle size of said glass powder.

8. A method for manufacturing a glass powder according to Claim 5,
wherein the amount of said raw material oxide powder is more than about 45% by
weight based on the total of the amount of said raw material oxide powder and the
oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is more than about 1/25 of the average
particle size of said glass powder.

9. A method for manufacturing a glass powder according to Claim 5,
wherein the amount of said raw material oxide powder is more than about 45% by
weight based on the total of the amount of said raw material oxide powder and the
oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is less than about 1/25 of the average
particle size of said glass powder.

10. A method for manufacturing a glass powder according to Claim 1,
wherein the amount of said raw material oxide powder is less than about 45% by
weight based on the total of the amount of said raw material oxide powder and the
oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is more than about 1/25 of the average
particle size of said glass powder.

11. A method for manufacturing a glass powder according to Claim 1,
wherein the amount of said raw material oxide powder is less than about 45% by
weight based on the total of the amount of said raw material oxide powder and the

oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is less than about 1/25 of the average
particle size of said glass powder.

12. A method for manufacturing a glass powder according to Claim 1,
wherein the amount of said raw material oxide powder is more than about 45% by
weight based on the total of the amount of said raw material oxide powder and the
oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is more than about 1/25 of the average
particle size of said glass powder.

13. A method for manufacturing a glass powder according to Claim 1,
wherein the amount of said raw material oxide powder is more than about 45% by
weight based on the total of the amount of said raw material oxide powder and the
oxide-converted amount of said water-soluble compound, and the raw material oxide
5 powder has an average particle size which is less than about 1/25 of the average
particle size of said glass powder.

14. A powder of glass particles having a sphericity of at least about 0.85
obtainable by the method of claim 12.

15. A powder of glass particles having a sphericity of at least about 0.85
obtainable by the method of claim 11.

16. A powder of glass particles having a sphericity of at least about 0.85
obtainable by the method of claim 10.

17. A powder of glass particles having a sphericity of at least about 0.85 obtainable by the method of claim 9.

18. A powder of glass particles having a sphericity of at least about 0.85 obtainable by the method of claim 5.

19. A powder of glass particles having a sphericity of at least about 0.85 obtainable by the method of claim 4.

20. A powder of glass particles having a sphericity of at least about 0.85 obtainable by the method of claim 1.

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